

CLAIMS

1. A resource management apparatus for a cellular communication system; comprising

5 a resource controller operable to allocate a radio resource to a subscriber unit in response to an operator identity associated with a service of the subscriber unit, such that different quality of service is achieved for different operators.

10 2. The resource management apparatus as claimed in claim 1 wherein the cellular communication system has a common radio access network resource divided into a first partition for a first operator and a second partition for a second operator, and the resource controller is operable to allocate resource from the first partition if the operator identity
15 corresponds to the first operator and from the second partition if the operator identity corresponds to the second operator.

3. The resource management apparatus as claimed in claim 2, wherein the resource management controller comprises:

20 control means for independently controlling at least one quality of service parameter associated with the first partition of the common radio access network resource in response to a first preference parameter of the first operator, and at least one quality of service parameter associated with the second partition of the common radio access network resource in
25 response to a second preference parameter of the second operator.

4. The resource management apparatus as claimed in claim 3 wherein the at least one quality of service parameter comprises at least one radio access network parameter chosen from the group of:

- 30 a) a call blocking rate;
b) a call drop rate;
c) an error rate;

- d) a delay;
- e) a throughput fairness; and
- f) a power control target.

5 5. The resource management apparatus as claimed in claim 3 or 4,
wherein the control means comprise a first quality of service controller for
independently controlling the at least one quality of service parameter
associated with the first partition and a second quality of service controller
for independently controlling the at least one quality of service parameter
10 associated with the second partition.

6. The resource management apparatus as claimed in claim 5 wherein
the first quality of service controller comprises first input means for
receiving control input from the first operator and the second quality of
15 service controller comprises second input means for receiving control input
from the second operator.

7. The resource management apparatus as claimed in claim 6 wherein
each of the first and second quality of service controllers has an
20 individually associated operations and maintenance controller.

8. The resource management apparatus as claimed in claim 5 to 7
wherein the first quality of service controller comprises a first resource
allocator for allocating resource associated with the first partition and the
25 second quality of service controller comprises a second resource allocator
for allocating resource associated with the second partition.

9. The resource management apparatus as claimed in claim 8 wherein
the first and second resource allocators comprise a traffic scheduler.

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10. The resource management apparatus as claimed in claim 8 wherein
the first and second resource allocators comprise admission controllers.

11. The resource management apparatus as claimed in claim 5 to 10 wherein the first quality of service controller comprises a first power control controller for controlling transmit powers associated with the first partition and the second quality of service controller comprises a second power control controller for controlling transmit powers associated with the second partition.

12. The resource management apparatus as claimed in claim 3 to 11 wherein the control means is operable to control the at least one quality of service parameter associated with the first partition and the at least one quality of service parameter associated with the second partition in response to at least one common parameter for the first and second partition.

13. The resource management apparatus as claimed in claim claimed in claim 12 wherein the at least one common parameter is a total resource usage for the first and second partition.

14. The resource management apparatus as claimed in any of the previous claims 2 to 13 wherein the partitioning of resource in said first and second partition is different in different regions.

15. The resource management apparatus as claimed in any of the previous claims 2 to 14 wherein the resource management apparatus comprises means for dynamically varying the partitioning of resource into said first and second partition.

16. The resource management apparatus as claimed in claim 15 wherein the partitioning of resource into the first and second partition is in response to a resource usage in said first and second partition.

17. The resource management apparatus as claimed in any of the previous claims 2 to 16 wherein the resource management apparatus further comprises means for presenting relative usage levels of the first and second partition respectively.

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18. The resource management apparatus as claimed in any of the previous claims 2 to 17 wherein both the first and second partition comprises resource associated with equipment shared between the first and second operator.

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19. The resource management apparatus as claimed in any of the previous claims 1 to 18 wherein the first operator is a cellular communication system operator and the second operator is a Mobile Virtual Network Operator.

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20. The resource management apparatus as claimed in any of the previous claims 1 to 19 wherein the radio resource comprises a frequency resource.

20 21. The resource management apparatus as claimed in any of the previous claims 1 to 20 wherein the radio resource comprises a code resource.

22. The resource management apparatus as claimed in any of the previous claims 1 to 21 wherein the radio resource comprises a power resource.

23. A cellular communication system comprising a resource management apparatus as claimed in any of the previous claims.

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24. A cellular communication system as claimed in claim 23 further comprising means for associating the operator identity to a service of a subscriber unit when initiating the service.

5 25. A cellular communication system as claimed in claim 23 or 24 wherein a radio access network is shared between the different operators.

26. A method of resource management in a cellular communication system; comprising

10 allocating a radio resource to a subscriber unit in response to an operator identity associated with a service of the subscriber unit, such that different quality of service is achieved for different operators.

27. A method of resource management as claimed in claim 26 wherein
15 the cellular communication system has a common radio access network resource divided into a first partition for a first operator and a second partition for a second operator and the step of allocating a radio resource comprises allocating resource from the first partition if the operator identity corresponds to the first operator and from the second partition if
20 the operator identity corresponds to the second operator.

28. A method of resource management as claimed in claim 27 wherein the step of allocating a radio resource comprises independently controlling at least one quality of service parameter associated with the first partition
25 of the common radio access network resource in response to a first preference parameter of the first operator, and at least one quality of service parameter associated with the second partition of the common radio access network resource in response to a second preference parameter of the second operator.

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